said] a unique identity data [streams] stream is transmitted by [received from multiple said] each transmitter unit [units and can communicate said identity data streams to said central data processing means];

said receiver units each comprising in combination infrared receiving means and programmable microprocessor means remotely separated from said central data processing means such that each said receiver unit has the capability to store multiple said unique identity data streams received from multiple said transmitter units and can communicate said identity data streams to said central data processing means.

Please cancel claims 78, 81, 88, 91, 98 and 101.

REMARKS

Claim 72 has been amended to overcome the rejection of claims 72-81 under Section 112 by correcting an inadvertent clerical error in the reproduction of claim 72 from United States Patent No. 5,627,524, Fredrickson, et al. Claims 72, 82 and 92 have been rejected under Section 112 based on the contention that the receivers each store the checksum to validate an incoming code (page 23, lines 1-14). Moreover, the microcontroller 158 stores the input bursts to establish the validity of the identification code (page 22, lines 20-25). While the microcontroller 222 of the arbitrator stores the identification code in static RAM, it is placed in a table of information for that particular receiver (page 27, lines 23-25). Thus, there is dedicated RAM for each receiver. Moreover, page 23, lines 20-23 disclose the use of the microcontroller 158 as a storage for information returned from the arbitrators. Page 24, lines 14-17 describe particulars of

the communication from the arbitrator to the microcontroller 158. Additional discussions of the communication between microcontroller 222 and each receiver is found beginning at page 25, line 26 through page 26, line 3. It is not fully understood what is meant in the official action column 5, line 28 by "only one code is described". In any event in response to the next statement, attention is respectfully directed to Applicant's disclosure beginning at page 12, line 25 and continuing through page 13, line 4. Claim 72 does not require the same site for the memory and detection and it is respectfully submitted to be immaterial with regard to claims 82 and 92 that identity information is stored remote to the receivers when it is the full function of the receivers that is served. For establishing interfering subject matter by counts formulated by the Patent Office, the bit stream data does not materially differ from Applicant's disclosure and the disclosure by the '524 patent. Regarding claims 75, 85 and 95, Applicant discloses light emitting diodes and the use of receivers in the ceilings and walls and this is submitted to meet the requirement for vertical and horizontal transmissions. Claims 77, 87 and 97 the stored data is fed back to the receiver and the remarks regarding the parent claims are equally applicable here.

With respect to claims 79, 89 and 99, while the claims language is chosen differently than applicant's disclosure, it is respectfully requested that the Examiner reconsidered because it is believed that applicant's disclosure meets the language of the claims.

Paragraphs 8-10 of the Official Action repeat in a believed verbatim fashion the final rejection and applicant respectfully incorporates by reference the response which is repeated as follows:

Fundamental to Applicants' claim to invention in claims 49-64 is the recitation dealing with the formation of infrared pulse bursts that uniquely occur to prevent synchronization with other pulse bursts that can be detected by the same detector in a facility. The relevant claim language in claim 49 is:

> "means responsive to an algorithm for controlling said means for transmitting said infrared pulse bursts during a predetermined time interval, with the occurrence of each pulse burst in time relative to the start of each time interval varying from time interval to time interval, the amount of said varying being controlled by said means responsive to an algorithm incorporated in each transmitter using said unique binary identification code of that transmitter for preventing synchronization with other transmitters and with ambient periodic resident signals in the facility"

and the relevant in claim 65 is:

> "an algorithm unique to and with that transmitter means for controlling said controller means for producing emissions of infrared pulse bursts by said infrared emitting means for defining a unique binary identification code at diverse times during each of predetermined time intervals, said algorithm controlling said controller means for causing each pulse burst in each successive time interval relative to the start of each of the successive time intervals to occur differently from time interval to time interval"

Claims 49-65 have been rejected based on the contention that the Guest transmitter could obviously be made to function in response to an algorithm or software alleged to be disclosed by Mufti. In support of the combination of references it is contended that a software programable device is easier and cheaper to mass produce and

provides flexibility because the software can be modified to provide different functions. An alternative was advanced that Mufti could be modified to send infrared bursts described by Guest and which would be an advantage over RF transmission as not requiring FCC licensing.

The argument of this rejection is clearly based on the impermissible hindsight reconstruction of applicant's claimed invention as there is clearly no basis in the references themselves to support the combination. The argument of the rejection fails to advance any reason why one would modify the references particularly the modifications to do something the references do not even merely suggest.

The Guest reference, which is owned by the Applicants and the forerunner of the Applicants' present invention, while transmitting infrared pulse bursts was severely limited by reason of the resistor-capacity combinations which select the number of pulses that can be transmitted during a pulse burst. The Guest system was used to only identify classes of individuals. The identity of an individual could not be determined. From column 11, at line 30, the identity of each class is defined by a train of pulses and the example given describes that the pulse trains are of one of three frequencies. The pulse train at the specific frequency was transmitted during specific bursts periods. (column 11, lines 44-48) The notion of using an algorithm unique to the badge to control the times when pulse bursts occur during regular intervals is neither disclosed or suggested by Guest. To combine references the obviousness of the combination of references must come from the references themselves not from the impermissible hindsight use of

Applicants' invention. In rejection it is contended that Mufti discloses an algorithm or software but no such disclosure can be found. Mufti discloses at column 8, RF bursts, not IR, having a basic structure shown in Figure 9. The random intervals at which RF bursts are transmitted as best understood is found in column 8, lines 18-22:

> "In order to reduce the possibility of fraud on the system, the transmitter units in the asset tags and ID badges make use of a counter increase the sequence number by one each time a tag or ID badge sends out a new burst."

The circuitry as shown in Figures 5 and 7 and while there is a microcontroller there is no disclosure of an algorithm or even more importantly of the use of an algorithm as the control for varying the time interval between successive bursts and further that the means which is responsive to the algorithm is also response to the unique binary identification code. Mufti uses only an ID code and no algorithm whereby the Mufti system is limited to the capacity of the ID code for distinguishing between the badges. The Mufti system requires the transmission of FR signals which are not limited to the line of sight whereas infrared is so limited. Thus, the Mufti system, unlike the Applicants' and Guest, will always respond to all badges in the facility and must distinguish amongst all badges whereas the Applicants' system need only distinguish among badges within line of a given receiver. There is no basis to support the argument of the rejection that it would be obvious to use IR in the Mufti system to avoid FCC regulations. The fact remains that

the Mufti disclosure does not suggest IR transmissions. The rejection continues by contending that it would have been obvious to randomly specify the transmission intervals as suggested by Haner.

The reliance on Haner for outputting a pulse at random times is wholly misplaced as far as Applicants' claims. Random outputting is not part of Applicants' invention and claims 49 and 65 as noted supra specifies that it is the algorithm that controls the transmission of infrared pulse bursts during predetermined time intervals with the occurrence of each burst in time relative to the start of each time interval varying with time interval to time interval the amount of said varying being controlled by said means responsive to an algorithm. Similar language was noted supra in regard to claim 65. There is nothing random about the transmissions in Applicants' invention and therefore the teaching of random transmissions by the disclosure by Haner particularly for the purposes advanced in the rejection.

Applicant argues that there is a lack of motivation to combine such references. As stated in In re Deminski, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986) and recently affirmed in In re Hans Oetker 24 USPQ 2d 1443, in order to rely on a reference as a basis for rejection of the Applicants' invention, the reference must either be in the field of Applicants' endeavor, or if not, then be reasonably pertinent to the particular problem with which the inventor was concerned such that a person or ordinary skill in the art would reasonably be expected to look in that field for a solution to the problem facing the invention. In addition, In re Oetker states that where there is a

combination of references from non-analogous sources, there must be some reasons, suggestion or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. Applicant also directs attention to in In re Fritch, 972 F.2d 1260, 23 USPQ 1780 (Fed. Cir. 1992). Pointing out that references must suggest a desirability of and thus the obvious of the modifications proposed by the examiner in the rejection now under appeal.

The second issue of obviousness presented by the rejection expands the combination of references to additionally include the Warren reference and select pages from a book by Radio Shack. The Warren reference is to a programmable unit for an electronics locking system for a storage unit. The second issue relies on this reference for the proposition that if Applicants' claims are interpreted to require a microcontroller with a memory and microcode, then the Warren reference suggests the obviousness to include ID stored in memory associated with the microcontroller. For reasons given supra, there simply is no reasonable basis found in the Warren reference that would suggest the obviousness to modify the teaching of an already improper combination of references, namely, Guest, Mufti and Haner with the Warren reference simply because the Warren reference discloses a microcontroller per se for storing access codes.

The claims comprising Group II are believed to patentably distinguish over the references in the two issues by the additional recitation in these claims of a microcontroller having a memory containing the unique binary identification code forming part of the transmitter that is responsive to the algorithm. The argument of the

rejection contends only that Mufti fails to describes a microcode. The argument is wholly erroneous that Guest discloses 16 bit code word. The Warren reference is relied upon because it per se describes a microcode which disclosure has nothing to do with the personnel hindsight.

The claims comprising Group III call for the pulse position scheme in which at least 2 binary bits of the identification code are identified by 1 pulse and were rejected by expanding the four (4) references (Guest, Mufti, Haner and Warren) to include the Radio Shack reference. The Radio Shack reference has been relied upon only for a per se showing that multiple bits per baud can increase the signaling rate on a channel. The pulse positioning scheme is then rationalized as obvious contending that 2 bits can be modulated as a pulse or a sound wave depending on the phase shift of the wave shown in Table 5-4 or 5-6. The argument is clearly hindsight since in fact the sole purpose of the pulse position scheme is to reduce not increase the information that can be transmitted with a single pulse. Clearly, the Radio Shack reference is not directed to the problem sought to be solved by Applicant's invention. The pulse position scheme is simply not to be found during the combination of the five (5) different references. It has been held that the mere combination of five (5) different references is in and of itself suggestive of improper hindsight.

For the foregoing reasons it is believed Applicant's claims are in condition with respect to a Notice of Interference and allowance of claims 49-71.

Respectfully submitted,

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Mail Certification

I hereby certify that this correspondence has been mailed by first class mail with prepaid postage addressed to the Commissioner of Patents and Trademarks, Washington DC 20231 on March 27, 2000, By: Debra J. Koch

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Date: March 27, 2000